

REMARKS

Claims 1-13 were pending in the present application. Claims 1-4, 6 and 11 have been cancelled without prejudice. Claims 5, 7, 8, 10, 12 and 13 have been amended and claims 14-16 have been added. Therefore, claims 5, 7-10 and 12-16 are currently pending.

Claims 5 and 7 have been amended specify "isolated and purified" proteins and polynucleotides. Support for the amendments to claim 5 can be found, for example, at least at page 9, lines 6-16 of the specification as originally filed. Support for the amendments to claim 7 can be found, for example, at least in Examples 8 and 9 at page 31, line 34 to page 33, line 3 of the specification as originally filed

Claim 7 has been further amended to provide proper dependency. Claims 8 and 10 have also been amended to provide proper dependency.

Claim 10 has been amended to specify a transformant, such as a microorganism, a plant or an insect. Support for the amendments to claim 10 can be found, for example, at least at page 17, line 13 to page 18, line 16 and page 22, lines 4-8 of the specification as originally filed.

Claims 12 and 13 have been amended to depend solely on claim 7. Support for the amendments to claim 12 and 13 can be found, for example, at least at page 22, line 33 through page 23, line 10 of the specification as originally filed.

New claim 14 is directed to a transformant in which the transformant is a microorganism, such as bacteria, Actinomycetes, yeast and fungi. Support for new claim 14 can be found, for example, at least at page 17, line 13 to page 18, line 16 of the specification as originally filed.

New claim 15 is directed to a transformant in which the transformant is a plant, such as maize, rapeseed or potato. Support for new claim 15 can be found, for example, at least at page 22, lines 4-8 of the specification as originally filed.

New claim 16 is directed to a transformant in which the transformant is an insect, such as silkworm. Support for new claim 16 can be found, for example, at least at page 22, lines 4-8 of the specification as originally filed.

The foregoing claim amendments should in no way be construed as acquiescence to any of the rejections, and have been made solely to expedite prosecution. Applicants reserve the right to pursue the claims as originally filed or as previously pending, in this or in one or more separate applications. No new matter has been added.

Rejection of Claims 1-7 and 11 Under 35 U.S.C. §101

Claims 1-7 and 11 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claims 1-4, 6 and 11 have been cancelled. Therefore, this rejection as it pertains to claim 1-4, 6 and 11 is moot. With regard to claims 5 and 7, these claims have been amended to recite “an isolated and purified” protein or polynucleotide, as suggested by the Examiner. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Objections to the Claims

Claims 12 and 13 are objected to for reciting “any one of claim 1 to.” Claims 12 and 13 have been amended, as suggested by the Examiner, to specify “claim 1.” Accordingly, this objection is moot.

Claim 11 is objected to for reciting “at least 80%ee.” Claim 11 has been cancelled, thus rendering this objection moot.

Rejection of Claims 1, 2, 6 and 11 Under U.S.C. §112, Second Paragraph

Claims 6-8 and 11 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants submit that the aforementioned rejection of the claims has been rendered moot in view of the cancellation of claims 6 and 11 and the amendments to claims 7 and 8 presented herein. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Claims 1, 2, 6 and 11 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner states that the phrase “reductase comprising physicochemical properties” is unclear “since proteins do not comprise physicochemical properties.” Claim 2 is

further rejected for “the recitation of 38,000 without a unit.” Applicants submit that the aforementioned rejection of the claims has been rendered moot in view of the cancellation of claims 1, 2, 6 and 11. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Rejection of Claims 1-4 and 6-13 Under 35 U.S.C. §112, First Paragraph

Claims 1-4 and 6-13 are rejected under 35 U.S.C. §112, first paragraph, as lacking written description. Specifically, the Examiner states that “the specification teaches only a few representative species” of a carbonyl reductase polypeptides. The Examiner further states that

the specification fails to describe any other representative species by any identifying structural characteristic or properties other than the functionality of encoding an enzyme with an activity of reducing 3,4-dimethoxyphenylacetone and lacking (S)-1-(3,4-dimethoxyphenyl)-2-propanol oxidizing activity.

Applicants respectfully traverse. However, to expedite prosecution, claims 1-4, 6 and 11 have been cancelled without prejudice. Further, claims 7-13 have been amended to depend, either directly or indirectly, from claim 5 to which this rejection does not apply. Accordingly, this rejection is moot.

Claims 1, 2, 3 and 6-13 are rejected under 35 U.S.C. §112, first paragraph, as not being enabled. Furthermore, the Examiner states that the disclosure does not provide enablement

to a polynucleotide sequence having one or more deletions, substitutions additions or insertions to they polynucleotide sequences of SEQ ID Nos: 17, 21 or 25 or provide enablement for a method of production of any optically active alcohol...using any carbonyl reductase having the limitation having an activity of reducing 3,4-dimethoxyphenylacetone and lacking (S)-1-(3,4-dimethoxyphenyl)-2-propanol oxidizing activity.

Applicants respectfully traverse. However, to expedite prosecution, claims 1, 2, 3, 6 and 11 have been cancelled without prejudice. Further claims 7-13 have been amended to depend, either directly or indirectly from claim 5 to which this rejection does not apply. Accordingly, this rejection is moot.

Claim 10 is rejected under 35 U.S.C. §112, first paragraph, as not being enabled. Specifically, the Examiner states that “Applicants have not enabled the full scope of a transformant since transformants encompass transgenic plants, transgenic animals including humans.”

Applicants respectfully traverse. However, to expedite prosecution, claim 10 has been amended to specify the transformant, *i.e.*, a microorganism, a plant or an insect. New claims 14-16 further specify and define the transformant. Such transformants are fully enabled based on the level of ordinary skill in the art at the time the application was filed, combined with Applicants’ teachings contained in the present specification (see, *e.g.*, page 17, line 13 to page 18, line 16 and page 22, lines 4-8 of the specification as originally filed). Based at least on the foregoing, Applicants respectfully request that the Examiner withdraw this rejection.

Rejection of Claims 1, 2, and 6-11 Under 35 U.S.C. §102(b)

Claims 1, 2, and 6-11 are rejected under 35 U.S.C. §102(b) as being anticipated by Costello *et al.* (European Patent Application No. EP918090-A2). Specifically, the Examiner states that Costello *et al.* describes ketoreductase genes that encode polypeptide sequences from *Saccaraomyces cerevisiae* and *Zygosaccaromyces rouxii* which have 100% sequence identity to SEQ ID Nos: 17, 21 and 25. The Examiner asserts that “[t]hese polypeptide sequences would inherently have all the properties of polypeptide sequences of SEQ ID NO: 17, 21 and 25 ...”

Applicants respectfully traverse. However, to expedite prosecution, claims 1, 2, 6 and 11 have been cancelled without prejudice. The remaining claims (claims 7-10) have been amended to depend, either directly or indirectly, from claim 5 to which this rejection does not apply. Therefore, this rejection is moot.

Rejection of Claims 1-4, 6-8 and 10-13 Under 35 U.S.C. §103(a)

Claims 1-4, 6-8 and 10-13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Michio Ito *et al.* (U.S. Patent No. 5,679, 557). Specifically, the Examiner states that

Michio Ito *et al.* teach a process of asymmetrically reducing 1-phenyl-2-oxo-propane derivatives with microorganisms including *Torulaspora delbrueckii*.

Michio Ito *et al.* ...teach a process of preparing an optically pure (S)-1-(3,4-dimethoxyphenyl)-2-propanol by a fermentation method comprising the microorganism *Torulaspora delbrueckii* or a preparation thereof...from which the polynucleotide and the encoded enzyme of the instant invention was derived.

The Examiner further states that

it would have been obvious for a person of skill in the art to further isolate and purify the enzyme responsible for the activity of reduction of the 3,4-dimethoxyphenylacetone and lacking (S)-1-(3,4-dimethoxyphenyl)-2-propanol oxidizing activity, perform peptide sequencing and isolate the carboxyl reductase gene from this organism...

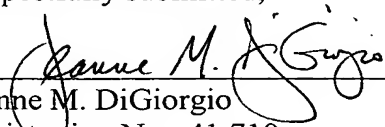
Applicants respectfully traverse. However, to expedite prosecution, claims 1-4, 6 and 11 have been cancelled. The remaining claims (claims 7, 8, 10, 12 and 13) have been amended to depend, either directly or indirectly, from claim 5 to which this rejection does not apply. Accordingly, this rejection is moot.

CONCLUSION

In view of the above amendment, Applicants believes the pending application is in condition for allowance.

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Respectfully submitted,

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